

Claims:

1. An isolated polynucleotide comprising,
a polynucleotide sequence which codes without interruption for the amino acid
sequence selected from SEQ ID NOS 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 46,
5 51, 49, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 87, 89, 96, and 100, or a complement
thereto.
2. An isolated polynucleotide comprising,
a polynucleotide sequence having 95% or more sequence identity along the entire
10 length of a polynucleotide sequence selected from SEQ ID NOS 1, 3, 5, 7, 9, 11, 13, 15, 17,
19, 21, 23, 25, 27, 29, 45, 47, 50, 48, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 84, 85, 86,
88, 95, and 99, or a complement thereto.
3. An isolated polynucleotide comprising,
15 a differentially regulated mammalian cancer gene having a polynucleotide sequence
which hybridizes under high stringency conditions to a polynucleotide having a
polynucleotide sequence set forth in SEQ ID NOS 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25,
27, 29, 45, 47, 50, 48, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 84, 85, 86, 88, 95, and 99,
or a complement thereto.
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4. An isolated polynucleotide of claim 3, wherein said high stringency conditions comprise
hybridizing 42°C in 5X SSPE, 0.3% SDS, and 50% formamide, and washes at 65°C for 15
minutes in 2X SSC, and 0.2% SDS.
- 25 5. An isolated human polypeptide which is differentially regulated in a human cancer,
comprising the complete amino acid sequence as set forth in SEQ ID NOS 2, 4, 6, 8, 10, 12,
14, 16, 18, 20, 22, 24, 26, 28, 30, 46, 51, 49, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 87,
89, 96, or 100, or a specific fragment thereof.
- 30 6. An isolated mammalian polypeptide which is differentially regulated in a mammalian
cancer, having 95% or more sequence identity along its entire length to a complete amino

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acid sequence as set forth in SEQ ID NOS 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 46, 51, 49, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 87, 89, 96, or 100, or a specific fragment thereof.

- 5 7. An isolated polypeptide which is coded for by a polynucleotide of claim 2 or 4.
8. A method of detecting a nucleic acid coding for human differentially regulated cancer genes, comprising,
- 10 contacting a sample comprising nucleic acid with a polynucleotide probe specific for a differentially regulated human cancer gene of claim 1 under conditions effective for said probe to hybridize specifically with said gene, and
- detecting hybridization between said probe and said nucleic acid.
9. A method of claim 8, wherein said detecting is performed by:
- 15 Northern blot analysis, polymerase chain reaction (PCR), reverse transcriptase PCR, RACE PCR, or *in situ* hybridization.
10. A method of treating a cancer showing altered expression of differentially regulated human cancer gene, comprising:
- 20 administering to a subject in need thereof a therapeutic agent which is effective for regulating expression of a differentially regulated human cancer gene of claim 1.
11. A method of claim 10, wherein said agent is an antibody or an antisense which is effective to inhibit translation of said gene.
- 25 12. A method of diagnosing a cancer associated with abnormal expression of a differentially regulated human cancer gene, or determining a subject's susceptibility to such cancer, comprising:
- 30 assessing the expression of a differentially regulated human cancer gene of claim 1 in a tissue sample comprising prostate or breast cells.

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13. A method of claim 12, wherein assessing is:

measuring expression levels of said gene, determining the genomic structure of said gene, determining the mRNA structure of transcripts from said gene, or measuring the expression levels of polypeptide coded for by said gene.

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14. A method of claim 12, wherein said assessing is performed by:

Northern blot analysis, polymerase chain reaction (PCR), reverse transcriptase PCR, RACE PCR, or *in situ* hybridization, and

using a polynucleotide probe having a polynucleotide sequence selected from SEQ ID

10 NOS 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 45, 47, 50, 48, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 84, 85, 86, 88, 95, and 99, or a complement thereto.

15. A method of assessing a therapeutic or preventative intervention in a subject having cancer, comprising,

15 determining the expression levels of differentially regulated cancer genes of claim 1 in a tissue sample comprising prostate or breast cells.

16. A method for identifying an agent that modulates the expression of differentially regulated cancer gene expressed in breast or prostate tissue cells, comprising,

20 contacting a cell population comprising breast or prostate cells with a test agent under conditions effective for said test agent to modulate the expression of a differentially regulated cancer gene of claim 1 in said breast or prostate cells, and

determining whether said test agent modulates said differentially regulated cancer gene.

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17. A method for identifying an agent that modulates the expression of a polypeptide coded for by a differentially regulated cancer gene expressed in breast or prostate tissue cells, comprising,

30 contacting a polypeptide coded for by a differentially regulated cancer gene of claim 1, with a test agent under conditions effective for said test agent to modulate said polypeptide, and

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determining whether said test agent modulates said polypeptide.

18. A method of claim 16 or 17, wherein said test agent is an antibody.

5 19. A method of detecting polymorphisms in differentially regulated cancer genes comprising:

comparing the structure of : genomic DNA comprising all or part of differentially regulated cancer genes, mRNA comprising all or part of differentially regulated cancer genes, cDNA comprising all or part of differentially regulated cancer genes, or a polypeptide
10 comprising all or part of differentially regulated cancer genes, with the structure of a differentially regulated cancer gene as set forth in a polynucleotide sequence selected from SEQ ID NOS 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 45, 47, 50, 48, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 84, 85, 86, 88, 95, and 99.

15 20. A method of identifying a genetic basis for a prostate or breast cancer, or susceptibility thereto, comprising:

determining the association of cancer, usceptibility thereto, with a polynucleotide of claim 1.

20 21. A method of claim 20, wherein determining is performed by producing a human-linkage map using said polynucleotide.

22. A method of claim 20, wherein determining is performed by comparing the nucleotide sequences of said polynucleotide between normal subjects and subjects having cancer.

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23. A non-human, transgenic mammal, or a cell thereof, whose genome comprises a functional disruption of a homolog of a differentially regulated cancer gene of claim 1.

24. An antibody which is specific-for a differentially regulated cancer gene polypeptide of
30 claim 5, 6, or 7.

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25. A method of advertising differentially regulated cancer genes for sale, commercial use, or licensing, comprising,

displaying in a computer-readable medium a polynucleotide set forth in SEQ ID NOS 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 45, 47, 50, 48, 52, 54, 56, 58, 60, 62, 64,
5 66, 68, 70, 72, 74, 84, 85, 86, 88, 95, or 99 of claim 1, effective specific fragments thereof, or complements thereto.

26. A method of selecting a polynucleotide sequence coding for differentially regulated cancer genes from a database comprising polynucleotide sequences, comprising

10 displaying, in a computer-readable medium, a polynucleotide sequence or polypeptide sequence for one or more differentially regulated cancer genes of claim 1, or complements to the polynucleotides sequence,

wherein said displayed sequences have been retrieved from said database upon selection by a user.

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